Green Building Project Fact Sheet

Beaulieu (Hydrogen Powered) Residence

Project	**Project Address**	10989 East Tusayan Trail
	Client	Bryan Beaulieu
	City	Scottsdale, Arizona
	Lat/Long/Elev	33° 30' North, 111°52' West, 1180 ft (360 m) above sea level
Team	**Architect**	R. J. Bacon Company
	Builder	The Construction Zone, Ltd.
General	**Time Line**	Construction began in September 2003
	Floor Area	4000 ft² livable (372 m²), 2907 ft² covered (270 m²)
	Cost	Unknown
Site Use	**Minimal Impact**	▪ Building designed with minimal impact on site topography. ▪ Desert plants and natural features beyond 10' of building footprint and paved areas protected during construction.
	Heat Mitigation	▪ Non-permeable walkways, uncovered patios, aprons, and driveways cover no more than 40% of the net buildable site area. ▪ All driveways constructed of permeable materials.
	Orientation	▪ Home is oriented on lot so the longest axial dimension faces within 20 degrees of south.
	Outdoor Living	▪ Home is designed with protected outdoor living area on east and/or south side. ▪ Home is designed with protected outdoor living area on north side. ▪ Protected outdoor living area(s) is equal in area to at least 25% of total conditioned space.
	Landscaping	▪ Xeriscape is at least 90% of landscaped areas.
	Water Conservation	▪ Non-sprinkler, zoned irrigation system with separate valving. ▪ Irrigation controller with rain sensor shut off. ▪ Rainwater collection system with on-site distribution to vegetation. ▪ Rainwater collection and storage system for future use on site.
	Pollution Prevention	▪ No chemical herbicides used on site. ▪ No chemical pesticides used on site.
	Air Quality	▪ Utility supplied power on site at start of construction.
Structural Elements	**Pollution Prevention**	▪ Non-asphalt based damp proofing installed at basement and/or retaining walls.
	Resource Conservation	▪ Western coal fly ash concrete with min. 18% substituted volume. ▪ Floor structure is at least 75% non-solid sawn lumber unless from certified sustainable source. ▪ Roof structure is at least 75% non-solid sawn lumber unless from certified sustainable source. ▪ Beams and headers are at least 75% non-solid sawn lumber unless from certified sustainable source. ▪ Interior framing is at least 75% non-solid sawn lumber unless from certified sustainable source. ▪ Integral wall system. ▪ Materials from regionally extracted resources. ▪ Products from regional manufacturers.

Building Envelope	**Energy Conservation**	▪ Use of thermal mass design. ▪ Radiant barriers installed. ▪ Diagnostic blower door test with 0.35 ACH or less. ▪ All exterior doors insulated with min. R-2. ▪ Windows have NFRC Solar Heat Gain Coefficient [SHGC] of .40 or less. ▪ Exterior shading devices/screens with a shading coefficient of 0.45 or lower on windows. ▪ Skylights with an NFRC rating of U-0.5 or lower and SHGC of 0.40 or less. ▪ South glass has full exterior shading in May, June, and July at noon. ▪ Structures and/or landscaping provide summer sun control/shading on min. 50% of east and west wall surfaces.
Heating, Cooling, and Ventilation	**Energy Conservation** **Indoor Environmental Quality**	▪ Zoned HVAC system with individual room temperature control. ▪ Evaporative cooling system with independent air distribution system. ▪ Cool tower or other passive cooling devices. ▪ Minimum of three reversible, multi-speed ceiling fans installed. ▪ Whole house fan. ▪ Stack and/or cross ventilation for seasonal cooling. ▪ Home is designed for passive solar winter heating. ▪ Ventilation system installed per ASHRAE standards. ▪ Whole house filtration system. ▪ All fans rated for 1.5 sone or less. ▪ Passive radon ventilation system installed per EPA guidelines.
Electrical Power, Lighting, and Appliances	**Energy Conservation**	▪ Daylighting allows natural light to enter the house from two sides of rooms in at least 50% of total livable floor area. ▪ No recessed lights in insulated ceilings. ▪ At least 50% of total numbers of fixtures are non-incandescent. ▪ Maximum interior lighting wattage not to exceed 0.5 watts/square foot. ▪ Smart wiring system. ▪ Energy Star rated appliances. ▪ Gas dryer stub-out. ▪ Solar electric lighting for at least 50% of site lighting. ▪ Provide south roof area for future solar panels and electrical rough in for solar electric power system. ▪ Solar electric power system installed. ▪ Fuel cells powered by solar power.
Plumbing System	**Water and Energy Conservation**	▪ Water heater within 20-pipe feet (6 m) length of bathroom fixtures. ▪ Whole house insulated hot water recirculation system. ▪ Provide south roof area for future solar panels and plumbing rough in for solar hot water heating system. ▪ Low-flow or other water conserving toilets. ▪ Two pipe drain system for future graywater recovery system.
Roofing	**Resource Conservation**	▪ Min. 25% recycled content roof material. ▪ High durability/low maintenance roof material. ▪ Roof system incorporates organic materials. ▪ Roof system has min. 30-year manufacturer warranty.

Exterior Finishes	**Resource Conservation**	▪ Locally derived materials. ▪ Regionally quarried and processed or cultured stone. ▪ Materials left in natural state.
Interior Finishes	**Indoor Air Quality**	▪ Only low toxic, solvent-free adhesives, mastics, and sealants used for at least 75% of the home. ▪ Water based finishes on floors.
Interior Doors,	**Resource Conservation**	▪ No tropical woods used. ▪ No wood base, cove, or door/window trim used.
Finish Floor	**Resource Conservation** **Indoor Air Quality**	▪ Renewable resource flooring. ▪ Combined hard flooring is 100% of conditioned floor area.
Pools and Spas	**Energy and Water Conservation** **Occupant Health**	▪ Solar assisted pool and spa heating/cooling system. ▪ Retractable pool cover. ▪ Pool has zero water loss backwash system. ▪ Non-chlorine pool filtration system.
Solid Waste	**Resource Conservation**	▪ Composting system installed in yard.
Special Options	**Energy Conservation**	▪ Participant in Energy Certification Program. ▪ Energy performance analysis.